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L7: Entry 6 of 8

File: USPT

Mar 19, 2002

DOCUMENT-IDENTIFIER: US 6357171 B1

TITLE: Method for aerial distribution of pollinating agents

Brief Summary Text (9):

While the concept of successfully distributing pollinating agents by aerial means is novel and new, the literature has examples of methods for the distribution of biological control agents (parasite/predator insects) by various means including aerial. Maedgen (U.S. Pat. No. 4,260,108) first taught the simple "airborne release and broadcast of loose parasite/predator insect eggs for biological control of insect pests." Show U.S. Pat. No. 4,966,329) advanced the art by distributing predatory mites in a carrier material that required the adequate mixing of the materials and subsequent blowing the particulate/mite mixture on to plants. Tedders (U.S. Pat. No. 5,484,504) introduced another form of carrier for predaceous insects in the form of a string with attached eggs that could be cut "in predetermined lengths to be manually placed on individual plants." Most recently, Carter (U.S. Pat. No. 5,996,276) teaches the use of a biodegradable delivery device (a container) for dispersing biocontrol agents into a field by aerial means. The throwing tool is a mechanical device similar to those used in casting clay pigeons for skeet target practice; the delivery device, a hollow clay pigeon. The biological control agents are described as means to biologically control insect pests as an alternative to chemical insecticides, a desirable benefit in the health-conscious marketplace. The preferred embodiment describes an aerodynamic, biodegradable saucer shaped delivery device containing parasitic wasps. A variety of suitable biological control agents are listed for such deployment, "Lygus hesperus, parasitic wasps such as Aphaelinus nr. paramali, lacewing eggs, parasitic or predaceous mites and spiders, nematodes, and viral or bacterial agents." None of the above teachings nor any of their incorporated references suggest, whether taken singly or in combination, the deployment of anything other than biological control agents for the control of insect pests in crops.

Detailed Description Text (6):

Nesting tubes are not a critical component to the delivery device in all cases, they assists in keeping some solitary pollinator in the target area by providing a ready and convenient nesting site while encouraging a rapid start to pollination activities which provide the supplies for nest building. Other solitary and other non-social pollinators like some flies will seek out nearby natural habitats. The use of the nesting tubes in this example of a delivery device is that of a feature and not a critical element of the aerial pollination method specification. Another feature within this context would be the old-fashion artillery shell shape of the delivery device. This shape is a proven, simple design that has an excellent capacity for stable flight and target acquisition. Examples of enhancement features to improve the aerodynamics characteristics and targeting ability are adding a rifling sabot for rotation when propelled or stabilizing fins when dropped. Another feature that could be employed would be means to control the final resting attitude of the delivery device upon landing. By engineering the exterior shape to facilitate how the delivery device comes to rest, features like the open exposure and subsequent access to the nesting tube entrances can be assured. Use of the weighted nosepiece virtually assures the delivery device lands nose down and topple over on to its side as designed. The delivery device is essentially nothing more than a container conveying the pollinators through the air to a selected landing site. A key requirement is that it keeps the pollination agents together and protected during the aerial trip. The shape and internal structures could be any of a number

of interacting geometric forms including by way of example a circular ring, cone, cube, cylinder, disc, ellipsoid, frustum, hemisphere, paraboloid, parallelepiped, prism, pyramid, rectangular prism, sphere, spheroid and combinations thereof that provide sufficient structural strength and cohesion to survive the deployment.

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☐ 1. Document ID: US 20030056427 A1

L4: Entry 1 of 1

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030056427

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030056427 A1

TITLE: Biological control of horn flies

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME

CITY

STATE

RULE-47

Daffunchio, Julio Angel

Buenos Aires

AR

COUNTRY

Palazzo, Eduardo Abel

Buenos Aires

AR

US-CL-CURRENT: 43/124

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
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DOCUMENT-IDENTIFIER: US 20030056427 A1

TITLE: Biological control of horn flies

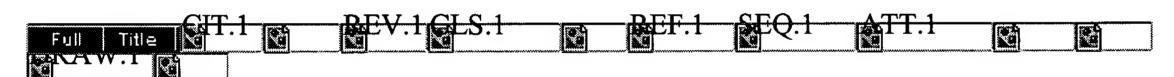
PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Daffunchio, Julio Angel Buenos Aires
Palazzo, Eduardo Abel Buenos Aires

US-CL-CURRENT: 43/124



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1. Document ID: US 20030056427 A1

L7: Entry 1 of 8

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030056427

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030056427 A1

TITLE: Biological control of horn flies

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Daffunchio, Julio Angel Buenos Aires AR
Palazzo, Eduardo Abel Buenos Aires AR

US-CL-CURRENT: 43/124



2. Document ID: US 20030005484 A1

L7: Entry 2 of 8

File: PGPB

Jan 2, 2003

PGPUB-DOCUMENT-NUMBER: 20030005484

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030005484 A1

TITLE: Microbiocidal and pesticidal aromatic aldehydes

PUBLICATION-DATE: January 2, 2003

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Crandall, Bradford G. JR. Davis CA US Emerson, Ralph W. Davis CA US

US-CL-CURRENT: 800/279; 514/532, 514/570, 514/701, 514/730



3. Document ID: US 20020146394 A1

L7: Entry 3 of 8

File: PGPB

Oct 10, 2002

PGPUB-DOCUMENT-NUMBER: 20020146394

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020146394 A1

TITLE: Mycoattractants and mycopesticides

PUBLICATION-DATE: October 10, 2002

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Stamets, Paul Edward Shelton WA US

US-CL-CURRENT: 424/93.5; 424/195.15



4. Document ID: US 20020099101 A1

L7: Entry 4 of 8

File: PGPB

Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020099101

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020099101 A1

TITLE: Use of flavonoid aldehydes as pesticides

PUBLICATION-DATE: July 25, 2002

INVENTOR-INFORMATION:

NAME CITY STATE COUNTRY RULE-47

Emerson, Ralph W. Davis CA US Crandall, Bradford G. JR. Davis CA US

US-CL-CURRENT: 514/729; 514/693, 514/701

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC
Drawi D	esc	mage			43.40					100	

5. Document ID: US 6551795 B1

L7: Entry 5 of 8

File: USPT

Apr 22, 2003

US-PAT-NO: 6551795

DOCUMENT-IDENTIFIER: US 6551795 B1

TITLE: Nucleic acid and amino acid sequences relating to pseudomonas aeruginosa for diagnostics and therapeutics

DATE-ISSUED: April 22, 2003

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Rubenfield; Marc J. Framingham MA
Nolling; Jork Ouincy MA
Deloughery; Craig Medford MA
Bush; David Somerville MA

US-CL-CURRENT: 435/69.1; 435/253.3, 435/320.1, 435/325, 435/6, 536/23.1, 536/23.7

Full Title Citation Front Review Classification Date Reference Sequences Attachments KMC Draw, Desc Image

6. Document ID: US 6357171 B1

L7: Entry 6 of 8 File: USPT Mar 19, 2002

US-PAT-NO: 6357171

DOCUMENT-IDENTIFIER: US 6357171 B1

TITLE: Method for aerial distribution of pollinating agents

DATE-ISSUED: March 19, 2002

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Harper; William A. Redmond WA 98052-4492

US-CL-CURRENT: 47/1.41; 449/1

Full Title Citation Front Review Classification Date Reference Sequences Attachments KMC Draw. Desc Image

7. Document ID: US 5799607 A

L7: Entry 7 of 8 File: USPT Sep 1, 1998

US-PAT-NO: 5799607

DOCUMENT-IDENTIFIER: US 5799607 A

TITLE: Culture medium for parasitic and predaceous insects

DATE-ISSUED: September 1, 1998

INVENTOR-INFORMATION:

NAME CITY STATE ZIP CODE COUNTRY

Greany; Patrick D. Gainesville FL Carpenter; James E. Tifton GA

US-CL-CURRENT: 119/6.5

Full Title Citation Front Review Classification Date Reference Sequences Attachments KMC

Draw Desc Image

8. Document ID: US 5512280 A

L7: Entry 8 of 8

File: USPT

Apr 30, 1996

US-PAT-NO: 5512280

DOCUMENT-IDENTIFIER: US 5512280 A

TITLE: Maintenance and long term stabilization of fungal conidia using surfactants

DATE-ISSUED: April 30, 1996

INVENTOR-INFORMATION:

NAME

STATE ZIP CODE COUNTRY

Johal; Sarjit S.

Hopkinton

CITY

MA

Marold; Lorraine M.

Worcester

MA

US-CL-CURRENT: 424/93.5; 435/254.1, 435/260

Full Title Citati	on Front Wee	ew Classification	Date Reference	Sequences	Anachmenis	KWIC
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FLYS.DWPI,TDBD,EPAB,JPAB,USPT,PGPB.	489
(6 AND FLY).USPT,PGPB,JPAB,EPAB,DWPI,TDBD.	8
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- NP106 National program planning workshop (11/20/02)

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STORY LEAD: Honey Boosts Effectiveness of Parasitic Wasps

ARS News Service Agricultural Research Service, USDA Jim Core. 2002

Feeding honey to a parasitic wasp from Brazil helps it attack pest fli Research Service scientists and cooperators report.

ARS scientists at the Center for Medical, Agricultural and Veterinar the University of Campinas in Brazil are evaluating the Brazilian wa from that country that may be biocontrol candidates against flies in t

Certain parasitic wasps native to the United States are now used to c on livestock and poultry farms and transport disease-causing organis at the ARS lab in Gainesville. The parasitic wasps reduce insecticide can buy native parasitic wasps from commercial insectaries.

But the effectiveness of native parasitic wasps is limited, because the pupae. One foreign wasp species being evaluated (Tachinaephagus 2 Used together, the native and parasitic wasps could attack flies in the fly control.

Unlike native wasps, however, foreign wasps do not derive energy fenergy boost. The researchers found that feeding the wasps honey transmount of progeny developing in flies.

The Gainesville and Brazilian researchers also discovered that hone zealandicus ward off a debilitating new disease transmitted from fen develop into adults and lay substantially more male eggs--a real barr

A detailed story about this research appears in the August issue of A http://www.ars.usda.gov/is/AR/archive/aug02/flies0802.htm http://

ARS is the chief scientific research agency of the U.S. Department c

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Search engine: Dogpile Picks found 1 results. The query sent was wasps and flies and biocontrol

1. Insects, Wasps, Bees

Animal Kingdom Collection 1 Learn all about insects, and more. http://www.zane.com/

Search engine: Google found 10 results. The query sent was wasps and flies and biocontrol

1. Biocontrol research centers on stable flies

... Some girl wasps just wanna kill flies. And that fact may eventually bring livestock producers a bic according to researchers at the ... http://beef-mag.com/ar/beef_biocontrol_research_centers/

2. France-Based Lab Plays Key Role in US Biocontrol Research / April ...

France-Based Lab Plays Key Role in US Biocontrol Research. By Jan Suszkiw April 17, 2001 Parasitic and bacteria abound at the Agricultural ... http://www.ars.usda.gov/is/pr/2001/010417.htm

3. Scientists in Montpellier are Exploring the World for Biocontrol ...

... Female flies lay their eggs inside the wheat ... an ARS cooperator in Sidney, Montana, biocontrol Hymenopterous wasps from Eurasia top the list of ... http://www.ars.usda.gov/is/AR/archive/apr01/

4. Tutorial

... Gradual metamorphosis is typical of true bugs and grasshoppers; complete metamorphosis is typ moths, and wasps. ... http://www.nysaes.cornell.edu/ent/biocontrol/info/primer.html

5. Beneficial Insects Part 2 - Parasitoids

... sheet: http://www.nysaes.cornell.edu/ent/biocontrol/parasitoids/pholetesor_ornigis.html. Family Wasps. Parasitic on dung flies and filth ... http://paipm.cas.psu.edu/BenefInsects/beneficials_Parasit

6. ARS News: Honey Boosts Beneficial Wasps

... effort to screen exotic wasp species from that country that may be biocontrol candidates against States. Certain parasitic wasps native to ... http://www.nps.ars.usda.gov/menu.htm?newsid=1937

7. <u>Lethbridge Research Centre - Kevin Floate Page</u>

... of natural enemies that are being, or have been, studied as biological control agents for these flie Agents. Parasitic wasps, Predaceous beetles, ... http://res2.agr.ca/lethbridge/scitech/kdf/bioagent_c

8. <u>Lethbridge Research Centre Report - Mar. 29, 2001 Page</u>

... Wolbachia, to boost their biocontrol efforts against stable fly, a harmful pest of cattle. Beneficial values biological control of flies in feedlots ... http://res2.agr.ca/lethbridge/rep2001/rep0329_e.htm

9. General Concepts of Biological Control

... Potential biocontrol agents are imported to the new location of the pest and released ... The major that are parasitoids: wasps, flies, some beetles ... http://extension.usu.edu/publica/gardpubs/ipm0.

10. NCSU: ENT/ort-103 BIOCONTROL IN CLOSED SYSTEMS

... task of setting up a biocontrol program for a ... sometimes expended uselessly against shore flies aphids infected with Aphytis wasps are resistant ...

http://www.ces.ncsu.edu/depts/ent/notes/O&T/production/note103.html

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1. Biocontrol research centers on stable flies

Pesky stable flies may have met their match. Researchers at the University of Nebraska-Lincoln and Research Service are testing tiny parasitic roundworms as biological control agents. They want to de roundworms, ... http://www.beef-mag.com

- 2. <u>Honey Boosts Effectiveness of Parasitic Wasps / August 19, 2002 / News from the USDA Agricultu</u> Information Staff, Agricultural Research Service, USDA. Communicating news and information about http://www.ars.usda.gov
- 3. Western Producer Male wasps 'a waste of energy', May 17, 2001

May 17, 2001 Male wasps 'a waste of energy' By Mary MacArthur Camrose bureau A Lethbridge ento eliminate males. "Males are unnecessary," says Kevin Floate, who is talking about small parasitic was flies in http://www.producer.com

- 4. <u>eLibrary.com M2 PressWIRE 08-19-2002</u>, 'US ARS: Honey boosts effectiveness of parasitic wasp eLibrary is the subscription based online library for fun or research. Find out more about securing yc 7-day trial with your credit card and retrieve 'eLibrary.com M2 PressWIRE 08-19-2002, 'US ARS: Feffectiveness of ... http://ask.elibrary.com
- 5. Honey Boosts Effectiveness of Parasitic Wasps

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Search engine: Ask Jeeves found 1 results. The query sent was wasps and flies and biocontrol

1. Chalcidoidea (chalcid wasps) Home Page

Arthropods Associated with Livestock Dung This web site is intended to provide current information biology and literature of Chalcidoidea, commonly known as chalcid parasitic wasps. Part of the site is provide... http://res2.agr.ca/ecorc/apss/chalhome.htm

Go to Ask Jeeves for more results

Search engine: Te ma f und 10 results. The query sent was wasps and flies and biocontrol

1. A Company Dedicated To Fighting Flies Naturally

Most horse owners have given up on controlling pesky, disease-carrying flies. The problem can seen waste of time. Not any more! http://www.happyhooves.com/aboutus.htm

2. How Fly Parasites Control Flies

View the five stages of a fly's lifecycle and how fly parasites disrupt the cycle and can be used as an program. http://www.happyhooves.com/cycle_large.htm

3. Trouble in paradise? 'Natural' pest control requires careful

Parasitic wasps and flies have been introduced to Hawaii at least 122 times over the last 100 years in a war against... http://www.eurekalert.org/pub_releases/2001-08/aaft-tip080901.php

4. Biocontrol research centers on stable flies

Some girl wasps just wanna kill flies. And that fact may eventually bring livestock producers a bioco according to... http://beef-mag.com/ar/beef_biocontrol_research_centers/index.htm

5. France-Based Lab Plays Key Role in U.S. Biocontrol Research / April

France-Based Lab Plays Key Role in U.S. Biocontrol Research. By Jan Suszkiw April 17, 2001. Parasi and bacteria abound at... http://www.ars.usda.gov/is/pr/2001/010417.htm

6. USDA, ARS, CMAVE, Mosquito and Fly Research Unit Achievements

...and control of microsporidian disease in commercially produced parasitic wasps that are used for I of house flies. http://cmave.usda.ufl.edu/~mosqfly/achievements.htm

7. USDA, ARS, CMAVE, Mosquito and Fly Research Unit Technology Transfer

Dispersal of Stable Flies: Phenology of Dispersing Flies. ... Triple whammy of chemicals, lime and pabring relief to people... http://cmave.usda.ufl.edu/~mosqfly/new_page_3.htm

8. Biocontrol</HEAD>

Some of the most effective biocontrol agents are small parasitic wasps and flies. They lay their eggs insect pests. http://www.waite.adelaide.edu.au/school/Pests/biocont.html

9. CABI - Biocontrol News and Information 19(4) December 1999 News -

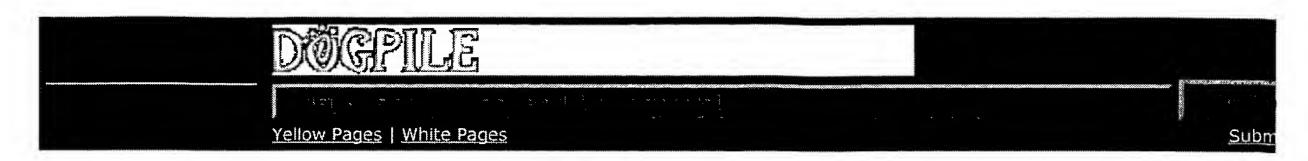
...florets whose pollen and nectar attract large numbers of bees, wasps, flies and butterflies. ... Roof Could Biocontrol Replace... http://pest.cabweb.org/Journals/BNI/Bni19-4/GENNEWS.HTM

10. 2002 Index

23 Biobased industrial products from ARS, Apr-2, 16 Biocompetitive exclusion, Jan-18 Biocontrol --c Aug-10 --of melaleuca... http://www.ars.usda.gov/is/AR/archive/dec02/index1202.htm

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